FIG. 1

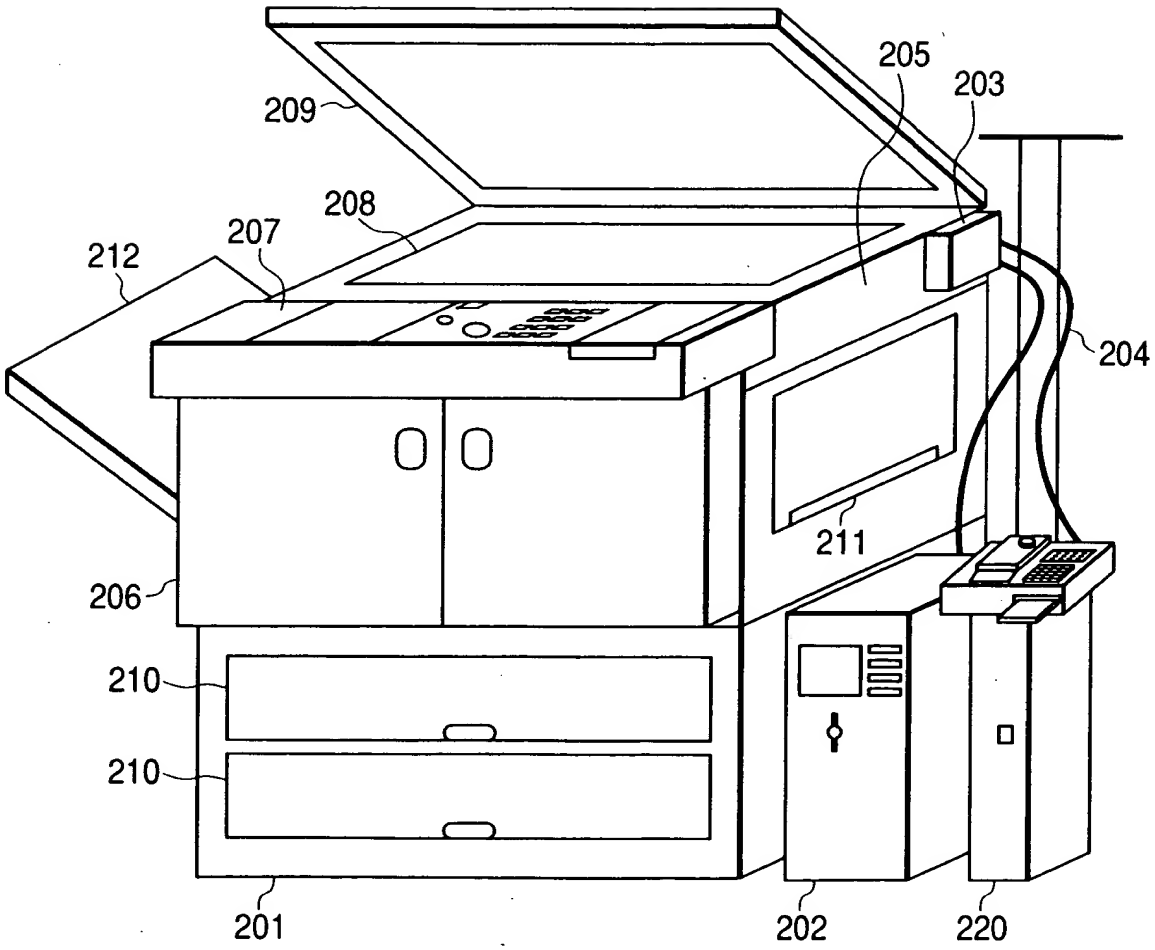

FIG. 2

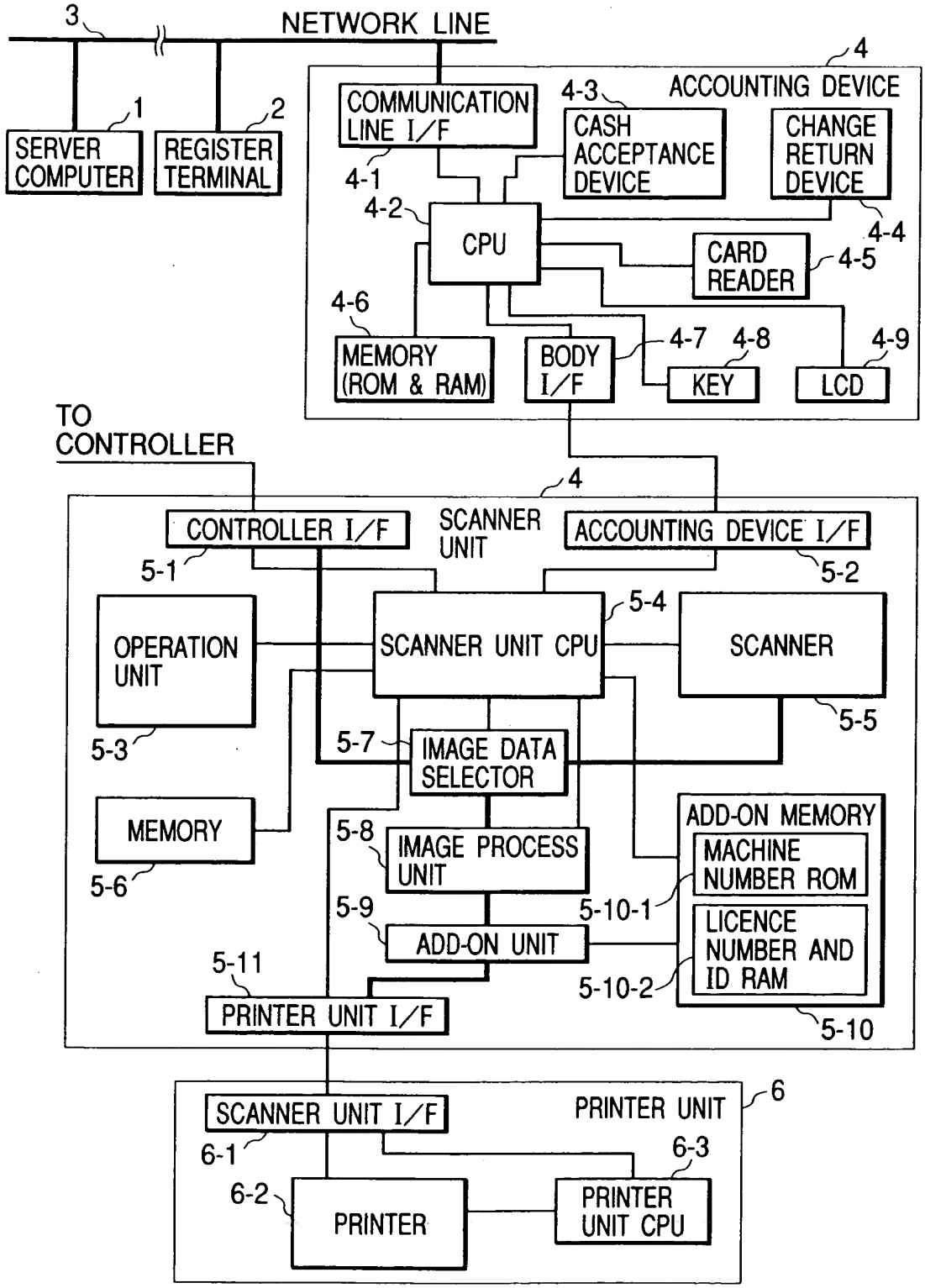
3
NETWORK LINE
1
SERVER COMPUTER
2
REGISTER TERMINAL
4
ACCOUNTING DEVICE
COMMUNICATION LINE I/F
4-1
4-3
CASH ACCEPTANCE DEVICE
CHANGE RETURN DEVICE
4-4
4-2
CPU
CARD READER
4-5
4-6
MEMORY (ROM & RAM)
BODY I/F
4-7
4-8
KEY
4-9
LCD
TO CONTROLLER
4
CONTROLLER I/F
SCANNER UNIT
ACCOUNTING DEVICE I/F
5-1
5-2
OPERATION UNIT
SCANNER UNIT CPU
5-4
SCANNER
5-5
5-3
5-7
IMAGE DATA SELECTOR
MEMORY
5-6
5-8
IMAGE PROCESS UNIT
ADD-ON MEMORY
MACHINE NUMBER ROM
5-10-1
5-9
ADD-ON UNIT
LICENCE NUMBER AND ID RAM
5-10-2
5-11
PRINTER UNIT I/F
5-10
SCANNER UNIT I/F
PRINTER UNIT
6
6-1
6-3
6-2
PRINTER
PRINTER UNIT CPU

FIG. 3

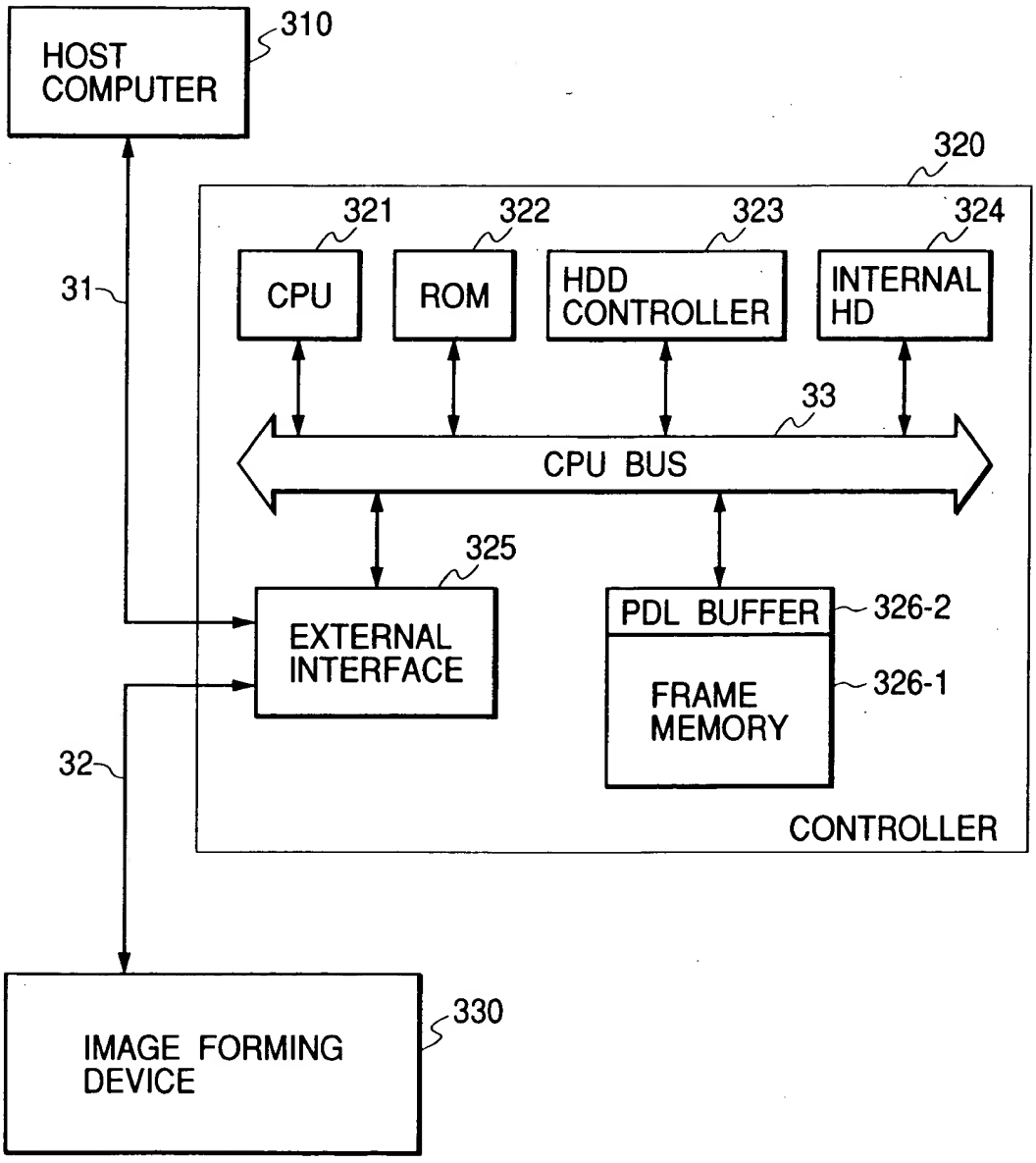
HOST COMPUTER
310
320
321
322
323
324
CPU
ROM
HDD CONTROLLER
INTERNAL HD
31
33
CPU BUS
325
EXTERNAL INTERFACE
PDL BUFFER
326-2
FRAME MEMORY
326-1
32
CONTROLLER
IMAGE FORMING DEVICE
330

FIG. 4

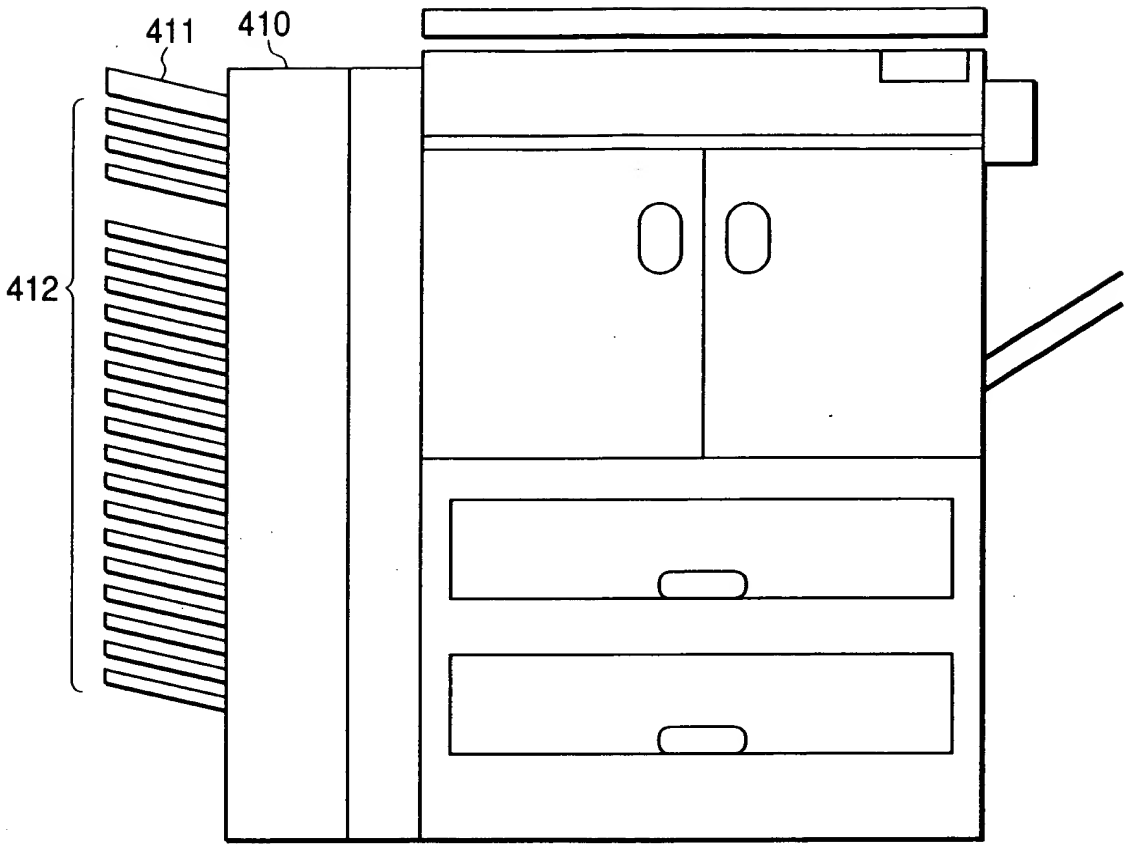
411
410
412

FIG. 5

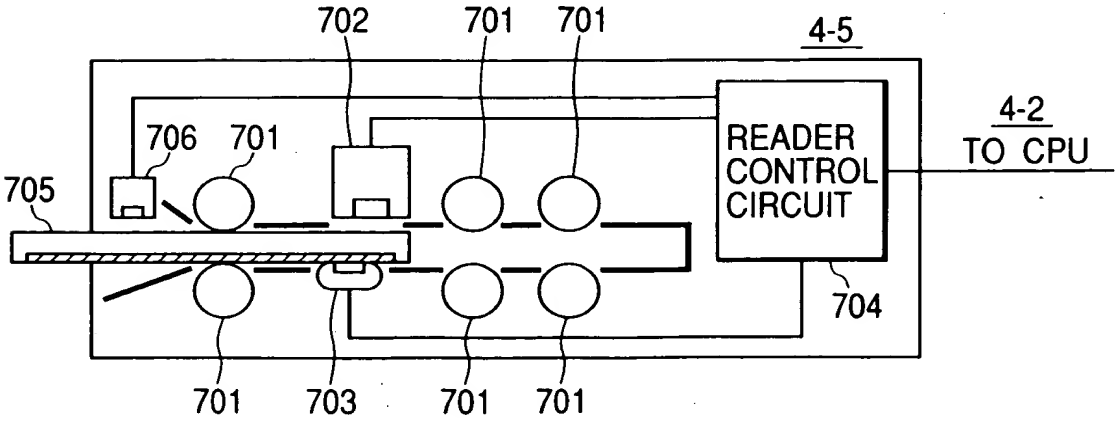
702
701
701
4-5
706
701
705
READER
CONTROL
CIRCUIT
4-2
TO CPU
704
701
703
701
701

FIG. 6

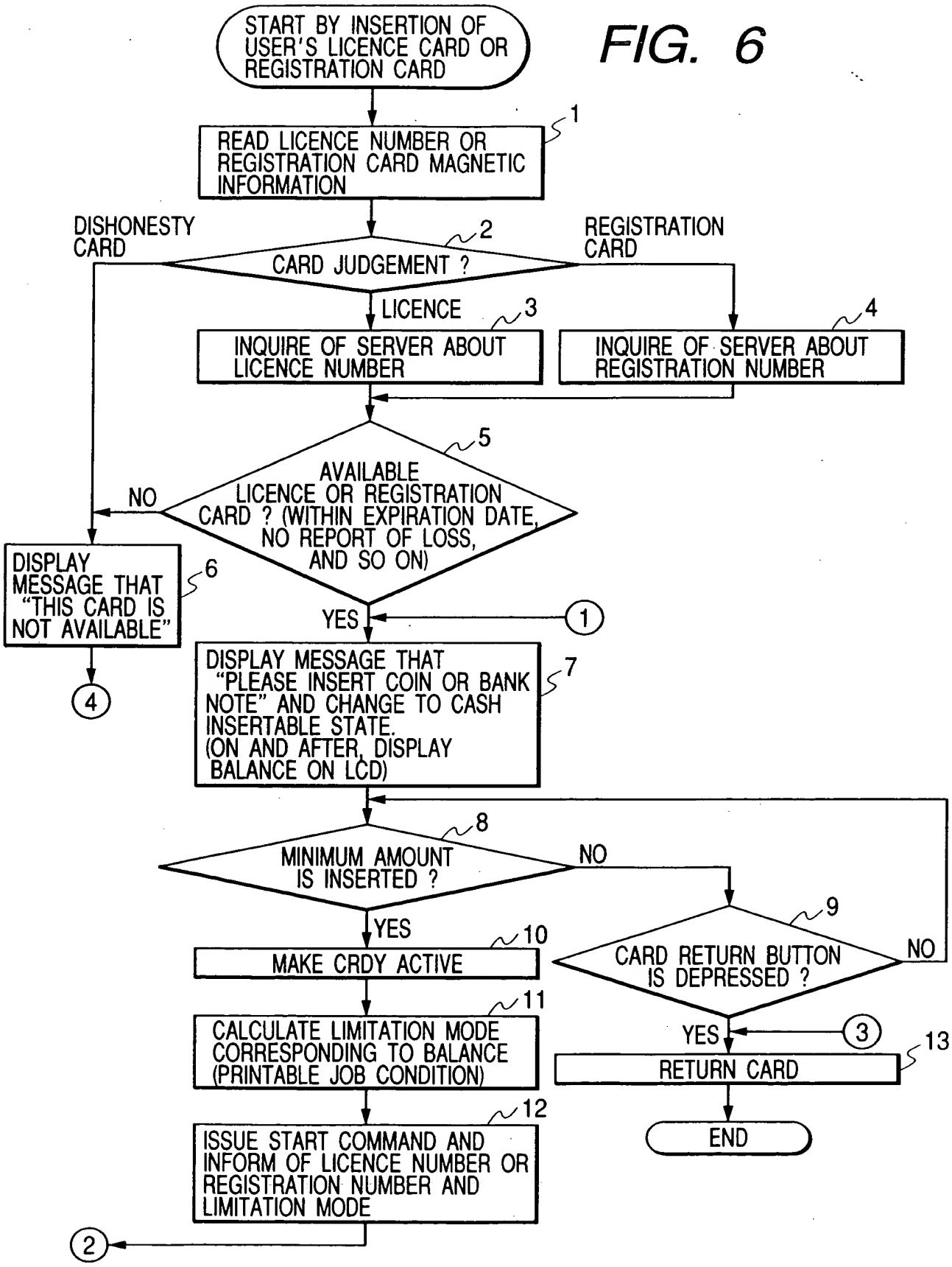
START BY INSERTION OF USER'S LICENCE CARD OR REGISTRATION CARD
READ LICENCE NUMBER OR REGISTRATION CARD MAGNETIC INFORMATION
1
DISHONESTY CARD
CARD JUDGEMENT ?
2
REGISTRATION CARD
LICENCE
3
INQUIRE OF SERVER ABOUT LICENCE NUMBER
4
INQUIRE OF SERVER ABOUT REGISTRATION NUMBER
5
AVAILABLE LICENCE OR REGISTRATION CARD ? (WITHIN EXPIRATION DATE, NO REPORT OF LOSS, AND SO ON)
NO
DISPLAY MESSAGE THAT "THIS CARD IS NOT AVAILABLE"
6
4
YES
1
DISPLAY MESSAGE THAT "PLEASE INSERT COIN OR BANK NOTE" AND CHANGE TO CASH INSERTABLE STATE. (ON AND AFTER, DISPLAY BALANCE ON LCD)
7
8
MINIMUM AMOUNT IS INSERTED ?
NO
YES
9
CARD RETURN BUTTON IS DEPRESSED ?
NO
YES
3
10
MAKE CRDY ACTIVE
11
CALCULATE LIMITATION MODE CORRESPONDING TO BALANCE (PRINTABLE JOB CONDITION)
12
ISSUE START COMMAND AND INFORM OF LICENCE NUMBER OR REGISTRATION NUMBER AND LIMITATION MODE
2
13
RETURN CARD
END

FIG. 7

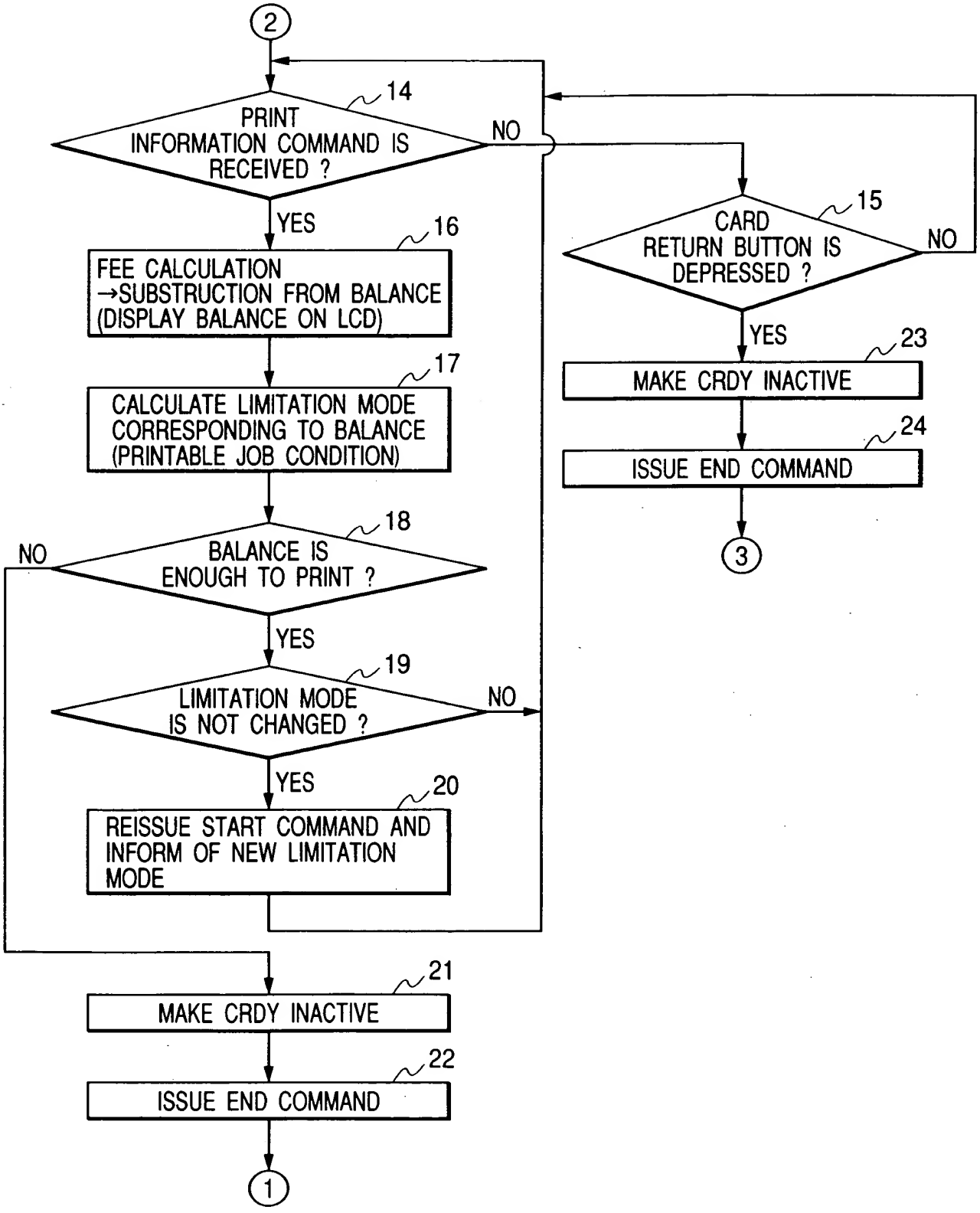
2
14
PRINT INFORMATION COMMAND IS RECEIVED ?
NO
YES
16
FEE CALCULATION →SUBSTRUCTION FROM BALANCE (DISPLAY BALANCE ON LCD)
17
CALCULATE LIMITATION MODE CORRESPONDING TO BALANCE (PRINTABLE JOB CONDITION)
18
NO
BALANCE IS ENOUGH TO PRINT ?
YES
19
LIMITATION MODE IS NOT CHANGED ?
NO
YES
20
REISSUE START COMMAND AND INFORM OF NEW LIMITATION MODE
21
MAKE CRDY INACTIVE
22
ISSUE END COMMAND
1
15
CARD RETURN BUTTON IS DEPRESSED ?
NO
YES
23
MAKE CRDY INACTIVE
24
ISSUE END COMMAND
3

FIG. 8

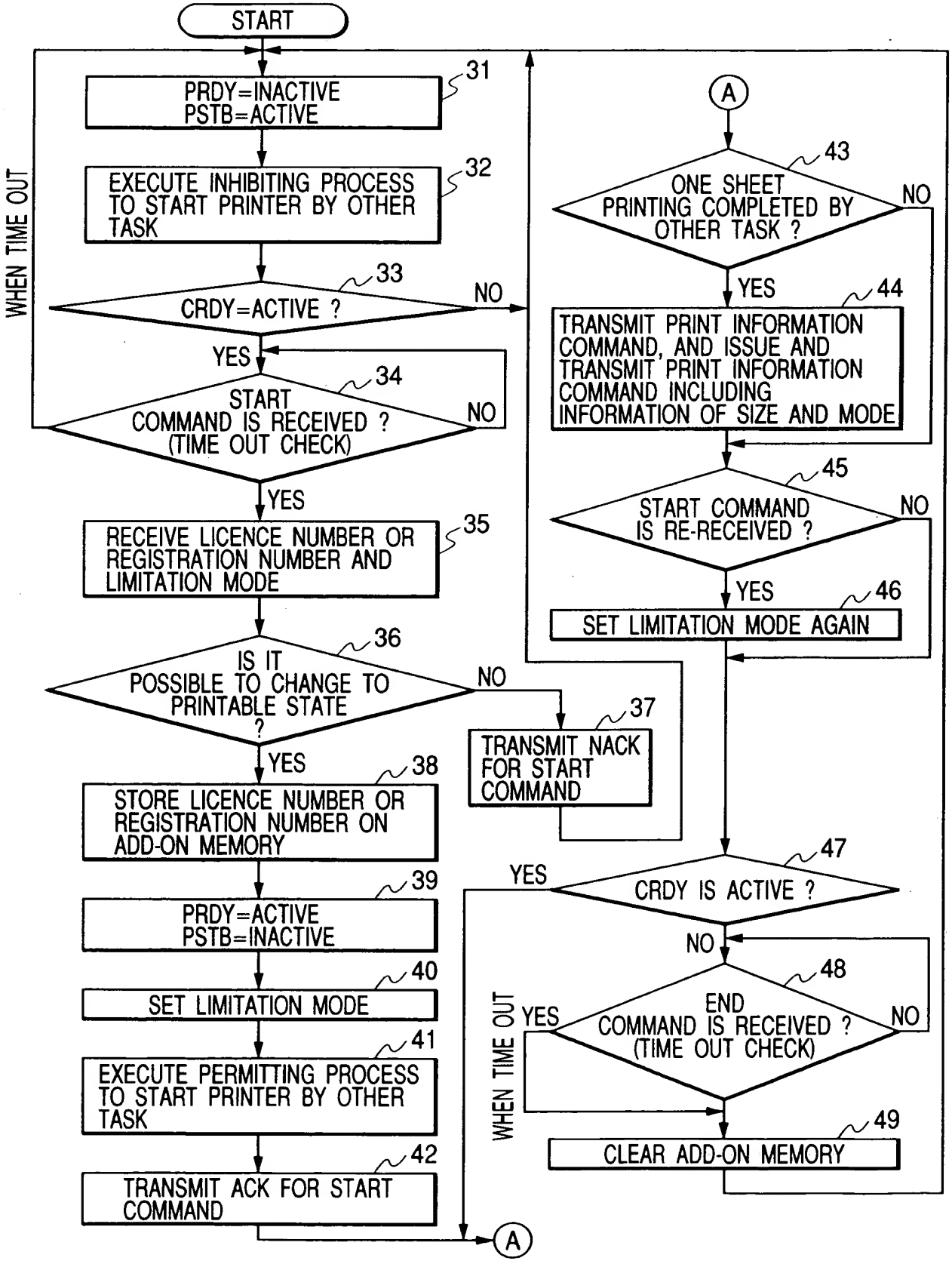
START
WHEN TIME OUT
31
PRDY=INACTIVE
PSTB=ACTIVE
32
EXECUTE INHIBITING PROCESS TO START PRINTER BY OTHER TASK
33
CRDY=ACTIVE ?
NO
YES
34
START COMMAND IS RECEIVED ? (TIME OUT CHECK)
NO
YES
35
RECEIVE LICENCE NUMBER OR REGISTRATION NUMBER AND LIMITATION MODE
36
IS IT POSSIBLE TO CHANGE TO PRINTABLE STATE ?
NO
37
TRANSMIT NACK FOR START COMMAND
YES
38
STORE LICENCE NUMBER OR REGISTRATION NUMBER ON ADD-ON MEMORY
39
PRDY=ACTIVE
PSTB=INACTIVE
40
SET LIMITATION MODE
41
EXECUTE PERMITTING PROCESS TO START PRINTER BY OTHER TASK
42
TRANSMIT ACK FOR START COMMAND
A
A
43
ONE SHEET PRINTING COMPLETED BY OTHER TASK ?
NO
YES
44
TRANSMIT PRINT INFORMATION COMMAND, AND ISSUE AND TRANSMIT PRINT INFORMATION COMMAND INCLUDING INFORMATION OF SIZE AND MODE
45
START COMMAND IS RE-RECEIVED ?
NO
YES
46
SET LIMITATION MODE AGAIN
47
CRDY IS ACTIVE ?
YES
NO
WHEN TIME OUT
48
END COMMAND IS RECEIVED ? (TIME OUT CHECK)
YES
NO
49
CLEAR ADD-ON MEMORY

FIG. 9

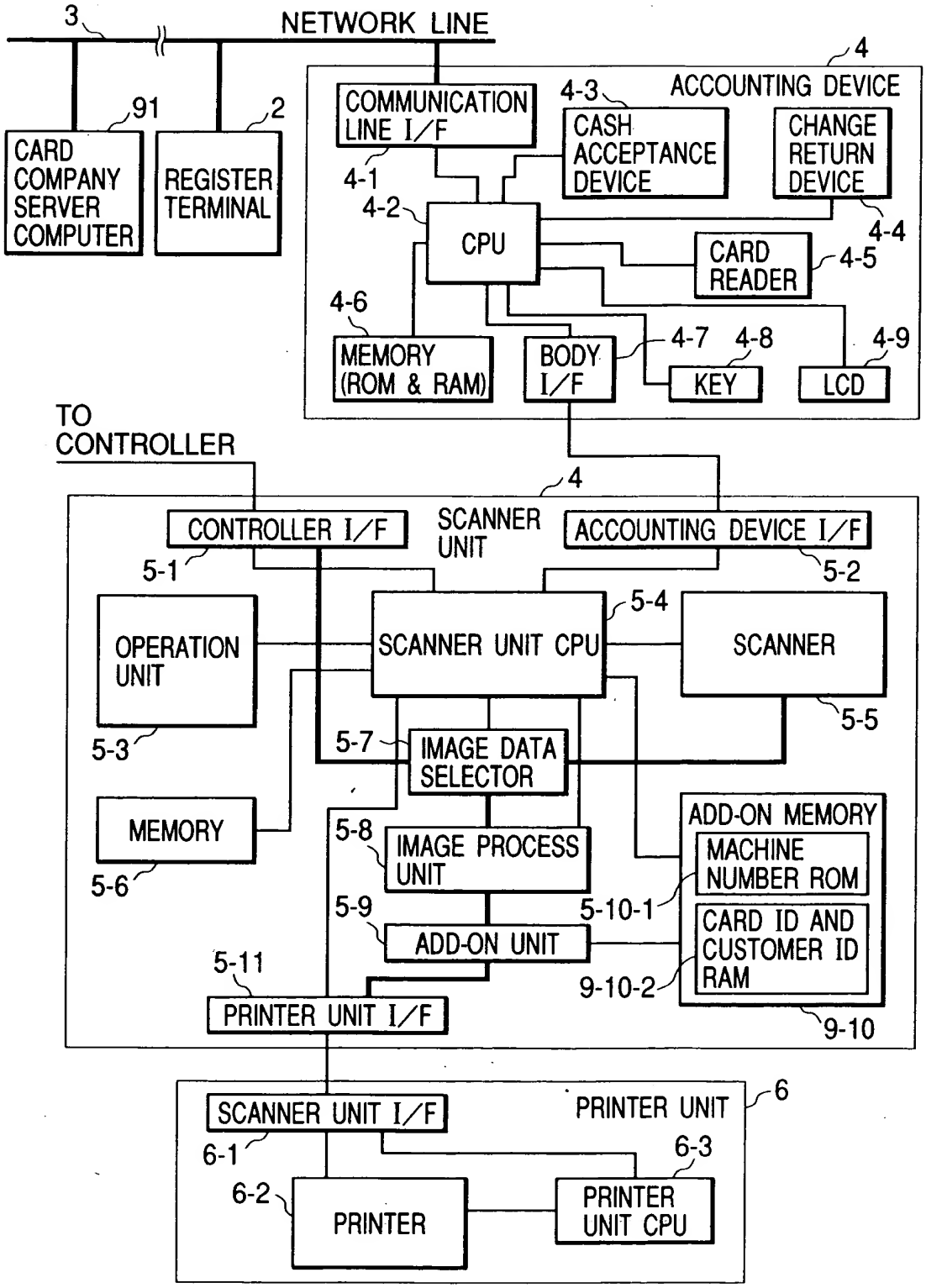
3
NETWORK LINE
91
CARD COMPANY SERVER COMPUTER
2
REGISTER TERMINAL
4
ACCOUNTING DEVICE
COMMUNICATION LINE I/F
4-1
4-3
CASH ACCEPTANCE DEVICE
CHANGE RETURN DEVICE
4-4
4-2
CPU
CARD READER
4-5
4-6
MEMORY (ROM & RAM)
BODY I/F
4-7
4-8
KEY
4-9
LCD
TO CONTROLLER
4
CONTROLLER I/F
5-1
SCANNER UNIT
ACCOUNTING DEVICE I/F
5-2
OPERATION UNIT
5-3
SCANNER UNIT CPU
5-4
SCANNER
5-5
5-7
IMAGE DATA SELECTOR
MEMORY
5-6
5-8
IMAGE PROCESS UNIT
ADD-ON MEMORY
MACHINE NUMBER ROM
5-10-1
5-9
ADD-ON UNIT
CARD ID AND CUSTOMER ID RAM
9-10-2
5-11
PRINTER UNIT I/F
9-10
SCANNER UNIT I/F
PRINTER UNIT
6
6-1
6-3
6-2
PRINTER
PRINTER UNIT CPU

FIG. 10

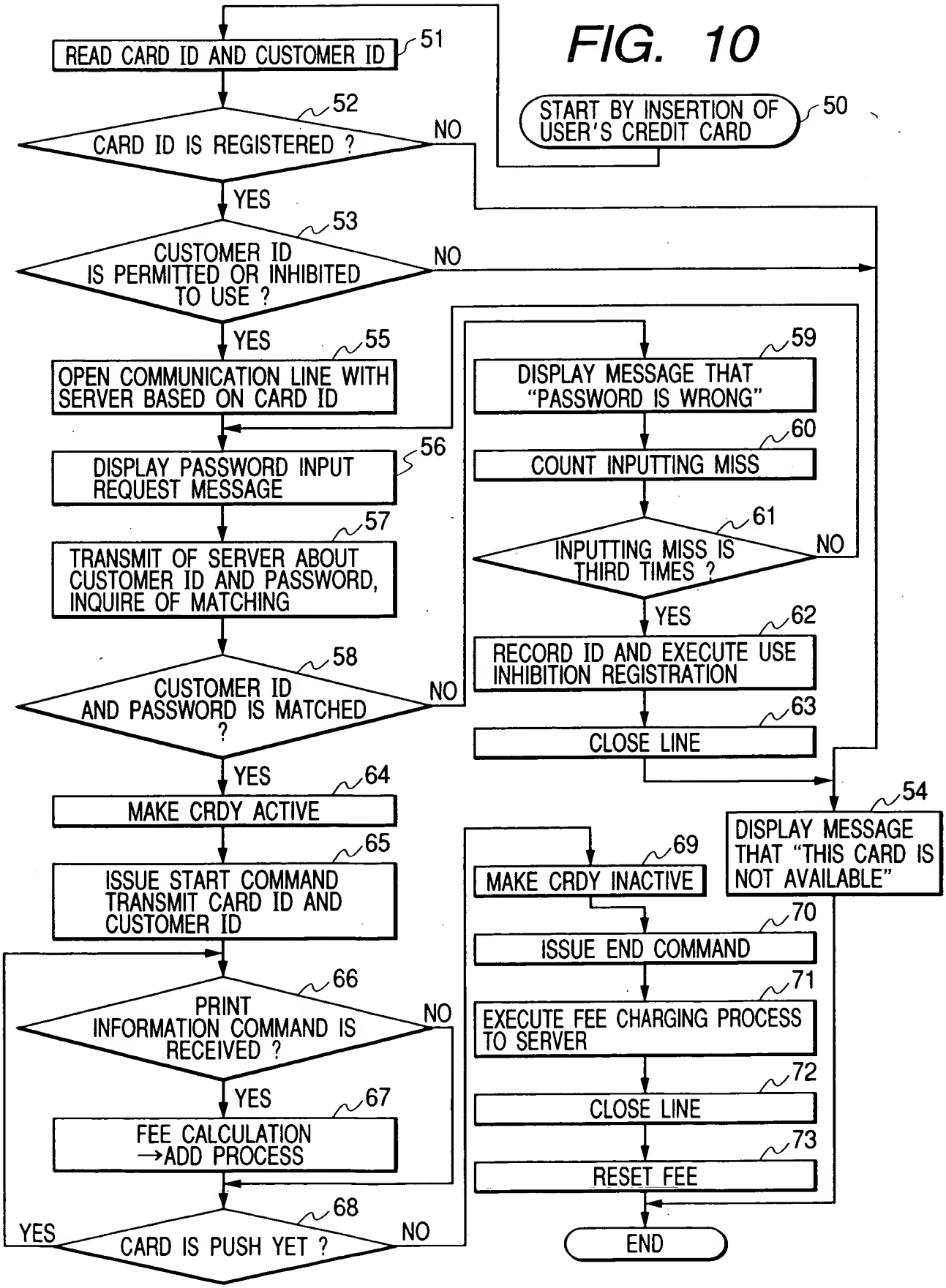
START BY INSERTION OF USER'S CREDIT CARD
50
READ CARD ID AND CUSTOMER ID
51
CARD ID IS REGISTERED ?
52
NO
YES
CUSTOMER ID IS PERMITTED OR INHIBITED TO USE ?
53
NO
YES
OPEN COMMUNICATION LINE WITH SERVER BASED ON CARD ID
55
DISPLAY PASSWORD INPUT REQUEST MESSAGE
56
TRANSMIT OF SERVER ABOUT CUSTOMER ID AND PASSWORD, INQUIRE OF MATCHING
57
CUSTOMER ID AND PASSWORD IS MATCHED ?
58
NO
YES
DISPLAY MESSAGE THAT "PASSWORD IS WRONG"
59
COUNT INPUTTING MISS
60
INPUTTING MISS IS THIRD TIMES ?
61
NO
YES
RECORD ID AND EXECUTE USE INHIBITION REGISTRATION
62
CLOSE LINE
63
MAKE CRDY ACTIVE
64
ISSUE START COMMAND TRANSMIT CARD ID AND CUSTOMER ID
65
PRINT INFORMATION COMMAND IS RECEIVED ?
66
NO
YES
FEE CALCULATION →ADD PROCESS
67
CARD IS PUSH YET ?
68
YES
NO
DISPLAY MESSAGE THAT "THIS CARD IS NOT AVAILABLE"
54
MAKE CRDY INACTIVE
69
ISSUE END COMMAND
70
EXECUTE FEE CHARGING PROCESS TO SERVER
71
CLOSE LINE
72
RESET FEE
73
END

FIG. 11

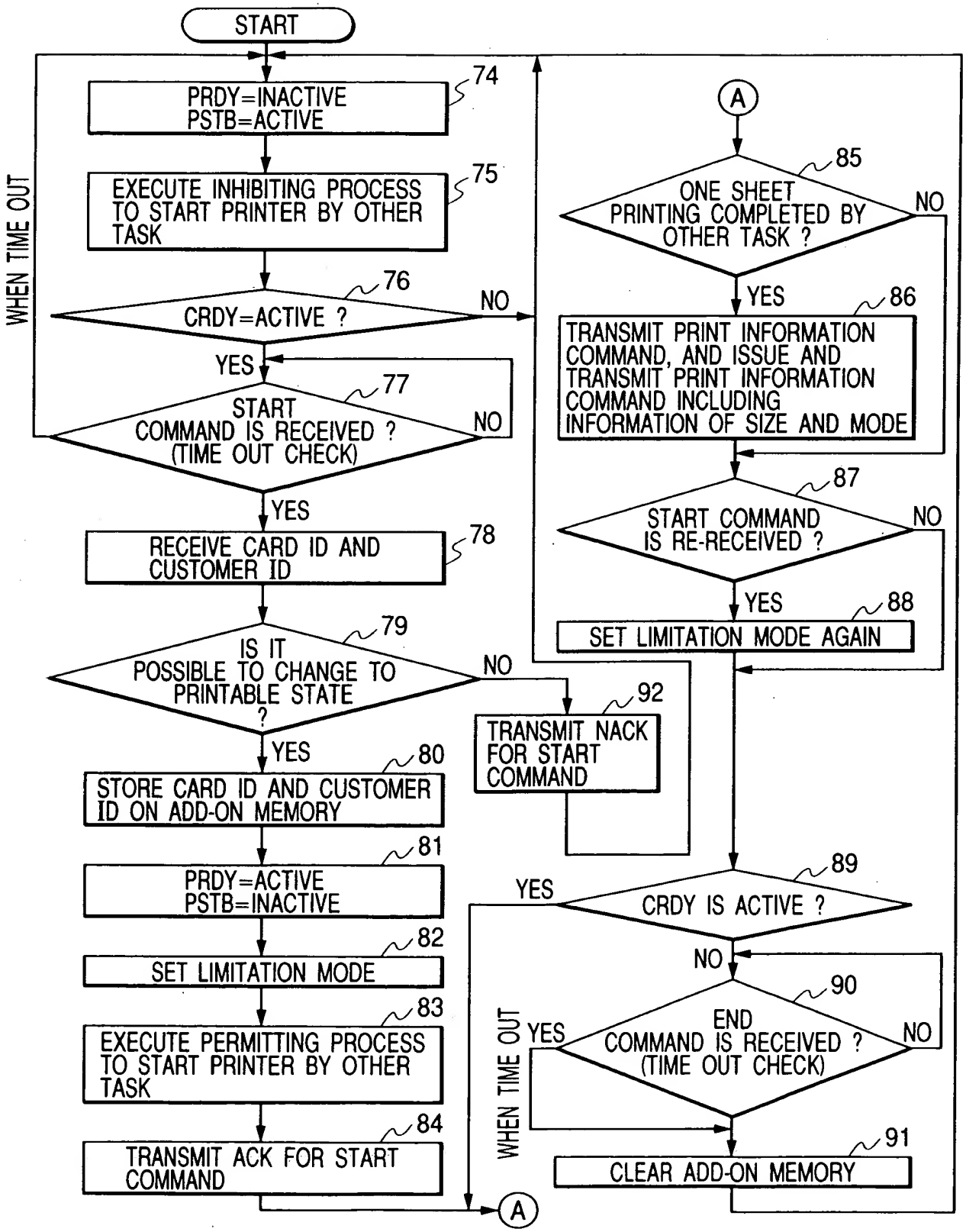
START
PRDY=INACTIVE
PSTB=ACTIVE
74
EXECUTE INHIBITING PROCESS TO START PRINTER BY OTHER TASK
75
CRDY=ACTIVE ?
76
NO
YES
START COMMAND IS RECEIVED ? (TIME OUT CHECK)
77
NO
YES
WHEN TIME OUT
RECEIVE CARD ID AND CUSTOMER ID
78
IS IT POSSIBLE TO CHANGE TO PRINTABLE STATE ?
79
NO
YES
STORE CARD ID AND CUSTOMER ID ON ADD-ON MEMORY
80
PRDY=ACTIVE
PSTB=INACTIVE
81
SET LIMITATION MODE
82
EXECUTE PERMITTING PROCESS TO START PRINTER BY OTHER TASK
83
TRANSMIT ACK FOR START COMMAND
84
A
TRANSMIT NACK FOR START COMMAND
92
A
ONE SHEET PRINTING COMPLETED BY OTHER TASK ?
85
NO
YES
TRANSMIT PRINT INFORMATION COMMAND, AND ISSUE AND TRANSMIT PRINT INFORMATION COMMAND INCLUDING INFORMATION OF SIZE AND MODE
86
START COMMAND IS RE-RECEIVED ?
87
NO
YES
SET LIMITATION MODE AGAIN
88
CRDY IS ACTIVE ?
89
YES
NO
END COMMAND IS RECEIVED ? (TIME OUT CHECK)
90
YES
NO
WHEN TIME OUT
CLEAR ADD-ON MEMORY
91

FIG. 12

STORAGE MEDIUM OF FD/CD-ROM, AND SO ON

DIRECTORY INFORMATION
FIRST DATA PROCESS PROGRAM PROGRAM CODE GROUP CORRESPONDING TO STEPS OF FLOW CHART SHOWN IN FIGS. 6 AND 7
SECOND DATA PROCESS PROGRAM PROGRAM CODE GROUP CORRESPONDING TO STEPS OF FLOW CHART SHOWN IN FIG. 8

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